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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,993	02/04/2002	Thomas Kemp	450117-03755	4229

20999 7590 03/10/2006  
FROMMER LAWRENCE & HAUG  
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NEW YORK, NY 10151

EXAMINER

ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/066,993	<b>Applicant(s)</b> KEMP, THOMAS	
	<b>Examiner</b> Angela A. Armstrong	<b>Art Unit</b> 2654	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 25 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

1. Claims 1-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims manipulate an abstract idea ("speech signal") or calculate a mathematical problem without producing a useful, concrete and tangible result. Although the preamble alludes to a method for recognizing speech, the preprocessing section merely transform data related to the speech signal without actually yielding a specific result or output.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6 and 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Acero et al (US Patent No. 5,604,839).

Acero discloses a method and system for improving speech recognition through front-end normalization of feature vectors.

3. Regarding claim 1, Acero discloses Method for recognizing speech, wherein in a preprocessing section (S2) a step of performing a variance normalization (VN) is applicable to a given or received speech signal (S) and/or to a derivative (S') thereof, said preprocessing section (col. 3, line 22

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continuing to col. 8, line 24) comprising the steps of: performing a statistical analysis (S11) of said speech signal (S) and/or of a derivative (S') thereof, thereby generating and/or providing statistical evaluation data (ED) (col. 3, line 56 to col. 6, line 67), generating and/or providing normalization degree data (ND) from said statistical evaluation data (ED) (col. 3, line 56 to col. 6, line 67), and performing a variance normalization (VN) on said speech signal (S), a derivative (S') and/or on a component thereof in accordance with said normalization degree data (ND)--in particular with a normalization strength corresponding to said normalization degree data (ND)--with normalization degree data having a value or values being 0 with respect to a given threshold value indicating that no variance normalization (VN) has to be performed (col. 5, lines 11-16).

Regarding claim 2, Acero discloses the said statistical analysis (S11) is performed in an at least piecewise or partial frequency-dependent manner (col. 3, line 52 to col. 4, line 7).

Regarding claim 3, Acero discloses the evaluation data (ED) and/or said normalization data (ND) are generated so as to reflect at least a piecewise frequency dependency (col. 3, line 57 to col. 4, line 7).

Regarding claim 4, Acero discloses the statistical analysis (S11) includes a step of determining signal-to-noise ratio data (SNR) or the like, in particular in a frequency-dependent manner (col. 4, lines 8-61).

Regarding claim 5, Acero discloses the discrete normalization degree values ( $D_j$ ) is used as said normalization degree data (ND), in particular each of which being assigned to a certain frequency interval ( $f_j, .DELTA.f_j$ ), said intervals ( $f_j, .DELTA.f_j$ ) having essentially no overlap (col.3, lines 57 to col. 4, line 7; col. 5, lines 46-67).

Regarding claim 6, Acero discloses the discrete normalization degree values ( $D_j$ ) has a value within the interval of 0 and 1 (correction factor -- col. 3, line 56 to col. 6, line 67).

Regarding claim 9, Acero discloses a transfer function between said statistical evaluation data (ED) and said normalization degree data (ND) is used for generating said normalization degree data (ND) from said statistical evaluation data (ED) (col. 4, line 8 to col. 5, line 16).

Regarding claim 10, Acero discloses a piecewise continuous, continuous or continuous differentiable function or the like is used as said transfer function, so as to particularly achieve a smooth and/or differentiable transfer between said statistical evaluation data (ED) and said normalization degree data (ND) (col. 4, line 8 to col. 5, line 16).

Regarding claim 11, Acero discloses a theta-function, a sigmoidal function or the like is employed as said transfer function (col. 4, line 8 to col. 5, line 16).

Regarding claim 12, Acero discloses the variance normalization (S14) is carried out by multiplying said speech signal (S), a derivative (S') and/or a component thereof with a reduction factor (R) being a function of said statistical evaluation data (ED), in particular of the signal noise, and the normalization degree data (ND), in particular of the normalization degree values (Dj) and/or in particular in a frequency-dependent manner (col. 4, line 8 to col. 8, line 11).

Regarding claim 13, Acero discloses a reduction factor (R) is used having the--in particular frequency-dependent--form  $R = 1 / (1 + (\sigma^{-1}) \cdot D)$  with  $\sigma$  denoting the temporal standard deviation of the speech signal S, its derivative (S'), a component and/or a feature thereof and D denotes the normalization degree value in question (col. 4, line 8 to col. 8, line 11).

### ***Response to Arguments***

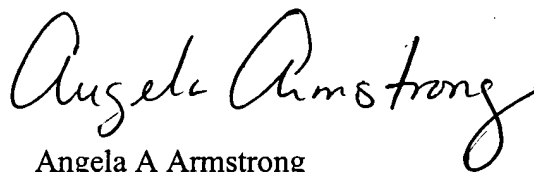
4. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 571-272-7598. The examiner can normally be reached on Monday-Thursday 11:30-8:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Angela A Armstrong  
Primary Examiner  
Art Unit 2654

AAA  
February 24, 2006